

Type D0800 Bantam Cartridge Holder

OPERATION MANUAL
AND PARTS LIST
SERIES 494

| <u>Model #</u> | <u>Voltage</u> |
|----------------|----------------|
| D0800 | 120 |
| D0805 | 240 |

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Safety Information

Alert Signals



Warning

Warnings alert you to a possibility of personal injury.



Caution

Cautions alert you to a possibility of damage to the equipment.



Note

Notes alert you to pertinent facts and conditions.

Important Information

This manual contains important operating and safety information. The user must carefully read and understand the contents of this manual prior to the use of this equipment.

Safety Information

Your Barnstead Bantam Cartridge Holder has been designed with function, reliability, and safety in mind. It is the user's responsibility to install it in conformance with local electrical codes. For safe operation, please pay attention to the alert signals throughout the manual.

Warnings

To avoid electrical shock, always:

1. Use a properly grounded electrical outlet of correct voltage and current handling capacity.
2. Disconnect from the power supply prior to maintenance and servicing.

To avoid personal injury:

1. Do not use in the presence of flammable or combustible materials; fire or explosion may result. This device contains components which may ignite such materials.
2. Refer servicing to qualified personnel.

General Specifications



Note

Pure water exposed to the atmosphere will absorb CO₂. This will lower resistivity and pH.

| | SI Units | English |
|-------------------------------------|--------------------------------------|--------------------------------------|
| Maximum flow rate | 38 LPH ¹ | 10 GPH ¹ |
| Temperature range | 4-49° C | 40-120° F |
| Exchange capacity | see below | see below |
| Plumbing service connections | | |
| Inlet | ~ | 1/4" OD tubing |
| Outlet | ~ | 1/4" OD tubing |
| Drain | ~ | 1/4" OD tubing |
| Overall dimensions | | |
| Width | 152 mm | 6" |
| Depth | 213 mm | 8-3/8" |
| Height | 724 mm | 28-1/2" |
| Electrical requirements | | |
| Model D0800 | 120V, 50/60 Hz, 1 phase ² | 120V, 50/60 Hz, 1 phase ² |
| D0805 | 240V, 50/60 Hz, 1 phase ² | 240V, 50/60 Hz, 1 phase ² |

¹Using average tap water. Delivers deionized water in continuous flow at atmospheric pressure. Although the cartridge holder can be operated at inlet pressures up to 700 kPa (100 psig), the cartridge holder cannot without any back pressure. Ensure that maximum flow rate is not exceeded, the outlet is open to atmosphere, and there are no tubing restrictions.

²Provided with 1.7 m (5-1/2") electrical cord and plug.

Cartridge Specifications

High Capacity

This cartridge (catalog no. D0803) has the capacity to remove 113 grams (1740 grains) of dissolved ionized impurities (as NaCl) to an endpoint of 50,000 ohm-cm. This high capacity configuration produces water with an electrical resistivity of about 175,000 ohm-cm. Each cartridge will purify about 660 liters (175 gallons) of water containing 170 mg/liter (10 grains/gallon, as NaCl). The pressure drop across the cartridge is less than 7 kPa (about 1 psig) at 38 L/hr (10 GPH) when the cartridge is new.

Ultrapure (Mixed Resin)

This cartridge (catalog no. D0809) has the capacity to remove 65 grams (750 grains) of dissolved ionized impurities (as NaCl). About 3/4 (75%) of the capacity is capable of producing water with an electrical resistivity greater than 1 megohm/cm. Each cartridge will purify about 380 liters (about 100 gallons) of water containing 170 mg/liter (10 grains/gallon, as NaCl) to 20,000 ohms. The pH is 6.8 to 7.2, and the water produced is largely free of silica. The water is also free of CO₂ until exposed to atmosphere. The pressure drop across the cartridge is less than 7 kPa (about 1 psig) at 38 L/hr. (10 GPH) when the cartridge is new.

Installation

Unpacking

Unpack the Bantam Holder carefully so that none of the parts will be marred or damaged. Ensure that any loose parts — such as tubing and fittings for the plumbing service connections — are not discarded with the packing materials.

Choosing a Site

Move the Bantam Holder to the desired operating location. The holder should be installed in a location accessible to a water supply (raw water faucet). Also, the unit should be accessible to an electrical outlet. The holder is equipped with a 1.7m (5-1/2') electrical cord.

Mounting

The Bantam Holder is shipped assembled for bench mounting. Four screws are provided for wall mounting if desired.

Plumbing Service Connections

The Bantam Holders are supplied with polypropylene elbows, inlet and drain tubing, and straight connectors. The plumbing service connections are accomplished as follows:

1. Remove the fitting and screen from the raw water faucet opening.
2. Install a customer-supplied 3/8" NPT x 1/8" NPT brass bushing in the faucet opening. The 1/8" NPT portion of the brass bushing is used to connect the



Note

It is suggested that the Bantam Holder inlet be connected to a raw water faucet. Other means of connecting the holder inlet to a raw water supply can be used, if desired.

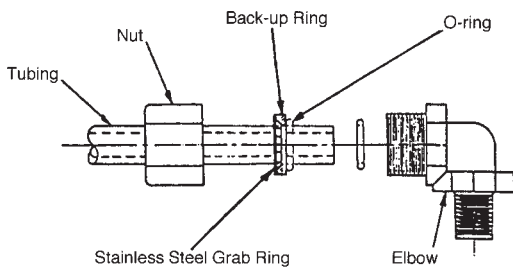
1/8" NPT x 1/4" OD straight connector provided to connect the Bantam Holder inlet to the raw water supply. If the raw water supply service connection is not 3/8" NPT, use another brass fitting as required.

3. Cut a piece of tubing from the 2.1m (7') of 1/4" OD tubing (part no. TU1494X1) provided to make the plumbing service connection between the raw water faucet and the plumbing service connection marked "inlet" on the Bantam Holder. Ensure that sufficient tubing is left to drain the holder through the plumbing service connection marked "drain" on the Bantam Holder to the sink and to make the plumbing service connection between the holder effluent connection at the top of the unit and the point of distribution.
4. Thread the 1/8" NPT x 1/4" OD straight connector provided (part no. 15451) into the brass bushing at the faucet opening and connect the tubing between this connection and the plumbing service connection marked "inlet" on the holder.
5. Ensure that the 1/8" NPT x 1/4" OD polypropylene elbow (part no. 15847) is threaded into the effluent connection at the top of the holder and connect tubing between this connection and the point of distribution. See *Elbow-Tubing Assembly* in this manual to ensure that the connection is made properly to prevent leakage.



Caution

Do not restrict the tubing and run the tubing in an upward direction from the top of the unit. Any restriction on the outlet can result in a cartridge bursting and flooding.



Elbow Tubing Installation

6. Connect the remaining tubing to the plumbing service connection marked “drain” and extend the tubing into the sink to allow the holder to be drained in an unrestricted manner.

Elbow-Tubing Assembly

Assembling the tubing and polypropylene elbow is accomplished as follows to ensure against leakage.

1. Remove the adapter nut, being careful not to lose the o-ring, backup ring, and stainless steel grab ring.
2. Remove the o-ring from the elbow.
3. Install the metal grab ring and backup ring in the adapter nut, and install the nut on the elbow. Do not install the o-ring at this time.
4. Push the tubing through the nut until it bottoms out in the elbow.
5. Remove the adapter nut, then install the o-ring on the tubing. Do not push the backup or metal grab rings back on the tubing when installing the o-ring on the tubing.
6. Install the adapter nut on the elbow and hand-tighten the nut.



Caution

Do not apply a wrench to the nut—the nut should be hand-tightened only to prevent leakage.

Cartridge Installation

Install a cartridge in the holder as follows:

1. Install the large o-ring (part no. 06419) on the cartridge holder. A small o-ring should be on the bottom of the cell. The large o-ring is packaged separately during shipment.
2. Install the fresh cartridge in an upright position, the large opening toward the bottom. The lower tightening wheel should be turned down to allow the cartridge to be centered between the top and bottom o-ring.
3. Turn the lower tightening wheel until the cartridge seats against the top o-ring.



Caution

Do not over-tighten the tightening wheel.



Note

Water purified by the ion-exchange method is not necessarily free from odor and color. In some instances, color or odor could be introduced by trace quantities of free amines or low molecular weight polymers which are present in fresh untreated resin. Generally, the amine odor lessens or disappears after passing a few gallons of water through the holder.

Operation



Caution

Do not exceed a flow rate of 38 LPH (10 GPH). Leakage will occur if this flow is exceeded.



Caution

Do not over-tighten the tightening wheel.

Operate the Bantam Holder as follows:

1. Close the drain valve.
2. Open the inlet valve one to two turns and allow a couple of minutes for the cartridge to fill. If leakage occurs at an o-ring, close the inlet valve, loosen the lower tightening wheel enough to rotate the cartridge 90°, and retighten. Open the inlet valve and recheck for leakage.
3. When water issues from the tubing, adjust the inlet valve to the desired flow rate (see *Cartridge Technical Characteristics*).

Purity Meter Operation

Operate the Direct Reading Meter by setting the on/off switch to the “on” position. When the purity meter drops below the acceptable minimum purity, or when the purity meter needle registers in the 0.05 to 0.025 megohm red range, the cartridge should be replaced. The meter provides a constant indication of the water purity. The meter scale is calibrated 0 to 19 PPM (ionizable impurities) with equivalent indications in megohms resistance from 0.025 to 18, making possible constant monitoring of the water purity. To stop the meter from operating, set the on/off switch to the “off” position.

Maintenance and Servicing



Warning

To avoid electrical shock, always disconnect the power supply before maintenance and servicing. Refer servicing to qualified personnel.

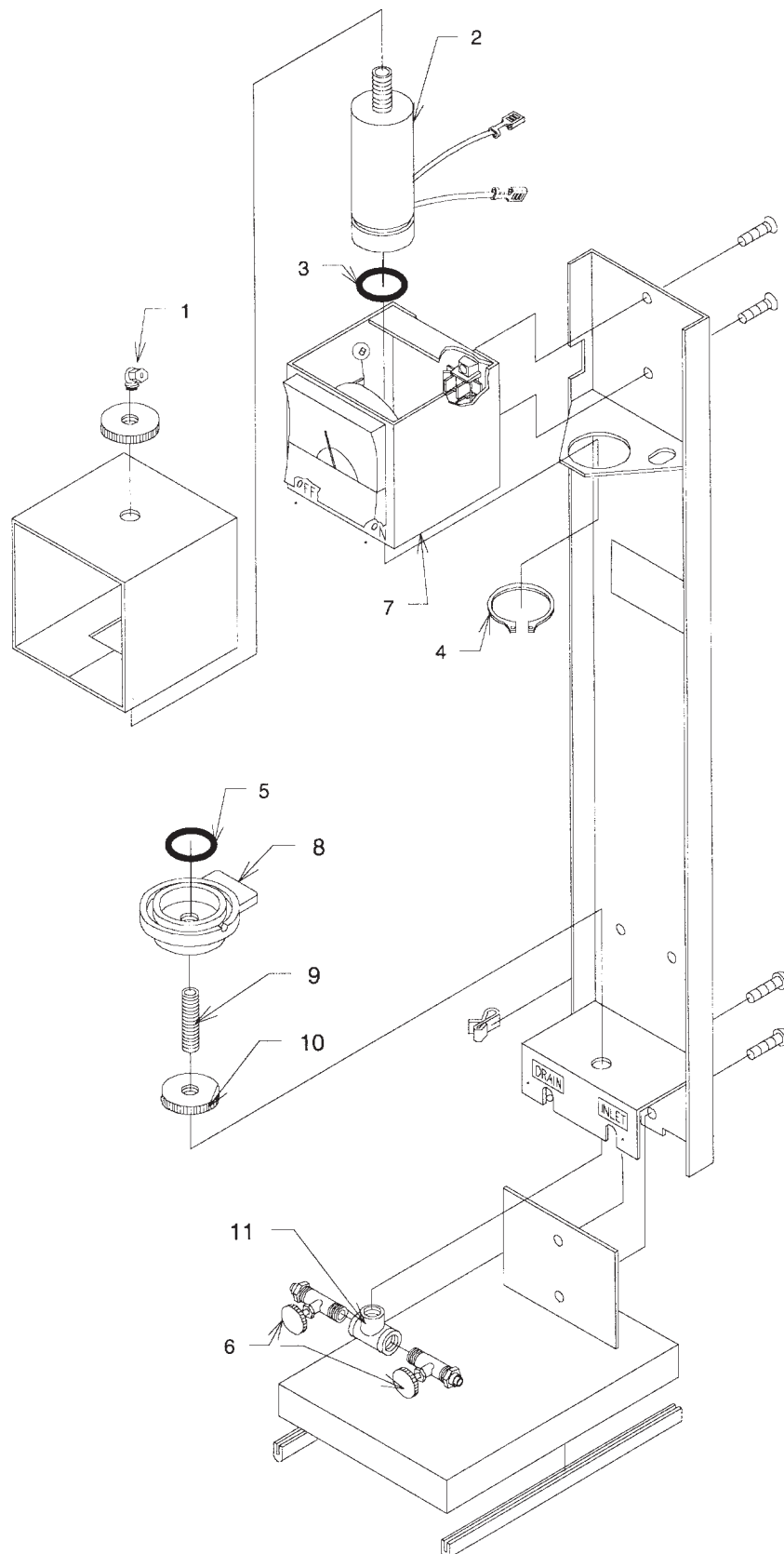
Maintenance of the Bantam Holder should be minimal, involving cartridge replacement and o-ring seal replacement. Also, an occasional calibration check of the purity meter might be necessary. Cartridges should be stored away from heat.

Calibration

Calibrate the Direct Reading Meter as follows:

1. Set the on/off switch to the “off” position.
2. Check the zero alignment of the meter needle to the meter scale. If required, rotate the zero adjustment screw until the meter needle is aligned with the line indicating the beginning of the meter scale. The zero adjustment screw is located on the face of the meter below the scales.
3. To calibrate the meter further, connect a known resistance across the cell terminals. A 50,000 ohm resistance should correspond to “0.05” on the meter scale.
4. With the on/off switch set to “on,” adjust the potentiometer (screwdriver adjustment) at the bottom of the meter case to make the scale reading correspond to the simulated resistance.

Exploded View



Replacement Parts

Model Type: D0800
Product Name: Bantam Cartridge Holder
Series Number: 494

| Key | Part # (Qty.) | Description |
|-----|------------------------------|---|
| 1 | 15847 | Elbow, 1/8" NPT x 1/4" tube |
| 2 | 15570 | Cell, BD-1 |
| 3 | 06411 | O-ring |
| 4 | 15482 | Ring, retaining |
| 5 | 06419 | O-ring |
| 6 | 03570 | Valve, brass, 1/4" OD x 1/8" NPT |
| 7 | 21538 (115V) 33019 (230V) | Meter |
| 8 | 15597 | Cartridge holder |
| 9 | 15896 | Nipple |
| 10 | 15502 | Lower Tightening Wheel |
| 11 | 05302 | Tee |
| | D0803 or D0809 | Cartridge, high capacity or Ultrapure, respectively (Purchased separately) |

Ordering Procedures

Please refer to the Specification Plate for the complete model number, serial number, and series number when requesting service, replacement parts or in any correspondence concerning this unit.

All parts listed herein may be ordered from the **Barnstead|Thermolyne** dealer from whom you purchased this unit or can be obtained promptly from the factory. When service or replacement parts are needed we ask that you check first with your dealer. If the dealer cannot handle your request, then contact our Customer Service Department at 319-556-2241 or 800-553-0039.

Prior to returning any materials to **Barnstead|Thermolyne Corp.**, please contact our Customer Service Department for a “Return Goods Authorization” number (RGA). Material Returned without an RGA number will be returned.

One Year Limited Warranty

Barnstead|Thermolyne Corporation warrants that if a product manufactured by **Barnstead|Thermolyne** and sold by it within the continental United States or Canada proves to be defective in material or construction, it will provide you, without charge, for a period of ninety (90) days, the labor, and a period of one (1) year, the parts, necessary to remedy any such defect. Outside the continental United States and Canada, the warranty provides, for one (1) year, the parts necessary to remedy any such defect. The warranty period shall commence either six (6) months following the date the product is sold by **Barnstead|Thermolyne** or on the date it is purchased by the original retail consumer, whichever date occurs first.

All warranty inspections and repairs must be performed by and parts obtained from an authorized **Barnstead|Thermolyne** dealer or **Barnstead|Thermolyne** (at its own discretion). Heating elements, however, because of their susceptibility to overheating and contamination, must be returned to our factory, and if, upon inspection, it is concluded that failure is not due to excessive high temperature or contamination, warranty replacement will be provided by **Barnstead|Thermolyne**. The name of the authorized **Barnstead|Thermolyne** dealer nearest you may be obtained by calling 1-800-446-6060 or writing to:

Barnstead|Thermolyne
P.O. Box 797
2555 Kerper Boulevard
Dubuque, IA 52004-0797
USA
FAX: (319) 589-0516

E-MAIL ADDRESS: mkt@barnsteadthermolyne.com

Barnstead|Thermolyne's sole obligation with respect to its product shall be to repair or (at its own discretion) replace the product. Under no circumstances shall it be liable for incidental or consequential damage.

THE WARRANTY STATED HEREIN IS THE SOLE WARRANTY APPLICABLE TO **Barnstead|Thermolyne** PRODUCTS. **Barnstead|Thermolyne** EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR USE.

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